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DIVISION 07 - THERMAL & MOISTURE PROTECTION

SECTION 07150

WATERPROOFING AND DAMPPROOFING

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SECTION 07150

WATERPROOFING AND DAMPPROOFING

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 41	(1994) Asphalt Primer Used in Roofing, Dampproofing and Waterproofing
ASTM D 449	(1989; R 1994) Asphalt Used in Dampproofing and Waterproofing

AMERICAN RAILWAY ENGINEERING & MAINTENANCE-OF-WAY ASSOCIATION (AREMA)

AREMA Manual	(1999) Manual for Railway Engineering (4 Vol.)

1.2 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-13 Certificates

Materials; FIO.

Certificates of compliance attesting that the materials meet specification requirements. Certificates may show qualification of the identical compound in the specified test.

1.3 DELIVERY, STORAGE, AND HANDLING

Materials shall be delivered to the project site in the original sealed containers bearing the name of manufacturer, contents and brand name, and stored in weather-tight enclosure to prevent moisture damage and absorption. Dampproofing materials shall be protected from freezing. Asphalt shall be stored off the ground on pallets, and covered on top and all side with breathable-type canvas tarpaulins. Plastic sheets cause condensation buildup and therefore shall not be used to cover materials. Care shall be taken during storage to avoid separation or settlement of the dampproofing emulsion components. Damaged or deteriorated materials shall

be removed from the project site.

PART 2 PRODUCTS

2.1 DAMPPROOFING

2.1.1 Asphaltic Primer

Asphaltic Primer for dampproofing shall conform to ASTM D 41, asbestos-free, non-fibrated, manufactured with highly ductile soft asphalts and selected hydrocarbons.

2.1.2 Asphalt

Asphalt for dampproofing shall conform to ASTM D 449 Type 2.

2.2 WATERPROOFING FOR BRIDGE DECK

2.2.1 Waterproof Membrane

Waterproof membrane shall be cold liquid-applied elastomeric membrane meeting the performance requirements of AREMA Manual Chapter 29, Section 2.3.10. The membrane shall be a 100% reactive spray-applied material. Ballast used in the Ballast Impact Test shall be type b, c or d as described in AREMA Manual Chapter 1, Part 2.3.1. Ballast shall meet the gradation requirements of AREMA Manual Chapter 1, Table 2-2 for Size 24, 25, 3, 4 or 4A.

2.2.2 Asphaltic Panels

Asphaltic panels shall be 1/2 inch thick panels, not less than 3 feet wide by 6 feet long and shall conforming to the requirements of AREMA Manual Chapter 29, Article 2.4.7.

PART 3 EXECUTION

3.1 PREPARATION

Surfaces scheduled for waterproofing or dampproofing shall be prepared in accordance with manufacturer's recommendations. Surface preparation shall be approved prior to application.

3.1.1 Protection of Surrounding Areas

Before starting the dampproofing work, the surrounding areas and surfaces shall be protected from spillage and migration of asphalt onto other work.

3.1.2 Concrete Surfaces

Surfaces shall be properly cured, free of form release agents, oil, grease, dirt, laitance, loose material, frost, debris and other contaminants. Form ties shall be cut flush with surface. Sharp protrusions and form match lines shall be removed. Holes, voids, spalled areas and cracks which can damage the dampproofing materials and impair performance shall be repaired.

Rough surfaces shall be parged with a well-adhering coat of cement mortar.

3.1.3 Metal Surfaces

Metal surfaces shall be dry and be free of rust, scale, loose paint, oil, grease, dirt, frost and debris. Joints between steel deck plates shall be filled with hot-poured asphalt or other filler approved by the Contracting officer.

3.1.4 Final Cleaning of Prepared Surfaces

The area to be dampproofed or waterproofed shall be thoroughly swept, vacuumed or air blown to remove all dust, dirt and loose foreign material. After the area is cleaned, it shall be maintained in a clean condition until completion of the dampproofing or waterproofing.

3.2 APPLICATION OF DAMPPROOFING

Dampproofing shall be applied in the areas indicated and shall consist of a coating of asphaltic primer followed by two coats of asphalt. Dampproofing work shall not be performed in temperatures below 40 degrees F nor when rain is likely before completion of the application. Dampproofing materials shall be applied in accordance with manufacturer's published instructions to produce a smooth uniform dry film not less than 12 mils thick without voids or defects. Dull or porous spots shall be recoated. Dampproofing materials shall seal tightly around pipes and other items projecting through dampproofing. Rates of application shall be as follows:

a. Asphalt Primer: 1-1/4 gallons per 100 square feet, cold-applied with spray or brush.

b. Asphalt: 4 gallon per 100 square feet, each coat, hot-applied with spray, brush or trowel.

3.3 APPLICATION OF WATERPROOFING FOR BRIDGE DECK

Waterproofing membrane and asphaltic panels shall be applied to the bridge deck as indicated and in accordance with AREMA Manual Chapter 29. Deck waterproofing shall not be done when ambient, substrate or material temperatures are below 40 degree F or above 100 degree F; when wet or damp surfaces will restrict the full bonding of materials or when it is not possible to obtain first-class workmanship. After the deck waterproofing work has started, no vehicular or equipment traffic shall be allowed on the bridge until after the work is complete and an adequate ballast cushion has been placed on the deck. The waterproofing shall be protected against damage from any source.

3.4 CLEAN-UP

Surfaces of other work which are stained with dampproofing materials shall be cleaned with a cleaner recommended by the dampproofing manufacturer.

3.5 PROTECTION/BACKFILLING

The completed work shall protected from damage during and after construction. A minimum drying time of 24 hours is required before backfilling. Cover or backfill within 72 hours after applicatoin. Backfill with care to avoid damage to dampproofed areas. Backfill shall not be placed until the dampproofing has been approved by the Contracting officer.

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